Claims

1. A contact lens, the lens including an optic zone centred on an optical axis, and a peripheral zone surrounding the optic zone, wherein a cross-sectional slice through the optic zone taken along a meridian comprises a series of successive arcs having a radial curvature power profile that increases monotonically with radial distance from the optical axis, wherein light rays from a distant point source passing through the midpoint of each arc converge towards a first point on the optical axis, and wherein for each arc, light rays from the distant point source passing through that arc converge towards a respective second point that is a respective first distance from the optical axis.

2. The contact lens according to claim 1, wherein the series of successive arcs are joined end to end.

3. The contact lens according to claim 1 or 2, wherein each arc in the series of successive arcs has a constant curvature within the arc.

4. The contact lens according to claim 1 or 2, wherein each arc in the series of successive arcs has a curvature within the arc that increases with radial distance from the centre of the lens.

5. The contact lens according to any preceding claim, wherein the series of successive arcs comprises a symmetric series of arcs centred on the optical axis.

6. The contact lens according to any preceding claim, wherein the series of arcs comprises at least 6 arcs.

7. The contact lens according to any preceding claim, wherein the series of arcs comprises at least 10 arcs.

8. The contact lens according to any preceding claim, wherein a cross-sectional slice taken along any meridian of the optical zone has substantially the same radial curvature profile.

9. The contact lens according to any preceding claim, wherein a cross-sectional slice taken along any meridian of the optical zone has substantially the same radial sagittal power profile.

10. The contact lens according to any of claims 1-7, wherein the circumferential curvature power profile of the optic zone varies with meridian around the lens.

11. The contact lens according to any of claims 1-7, wherein the sagittal power profile of the optic zone varies with meridian around the lens.

12. The contact lens according to any preceding claim, wherein at the centre of the optic zone, the lens has a base power of between -0.25 D and -15.0 D.

13. The contact lens according to any preceding claim, wherein the series of arcs have a curvature that provides an add-power of between +0.5 D and + 20.0 D.

14. The contact lens according to any preceding claim, wherein the optic zone has a curvature power that results from the curvature of an anterior surface and/or a posterior surface of the lens.

15. The contact lens according to any preceding claim, wherein the lens comprises an elastomer material, a silicone elastomer material, a hydrogel material, or a silicone hydrogel material, or mixtures thereof.

16. A method of manufacturing a contact lens, the method comprising:

forming a contact lens according to any preceding claim.

17. A method of designing a contact lens, the method comprising:

modelling a contact lens, the lens including an optic zone centred on an optical axis, and a peripheral zone surrounding the optic zone, wherein a cross-sectional slice through the optic zone taken along a meridian has a radial curvature power profile that increases monotonically with radial distance from the optical axis;

within the model, dividing the cross-sectional slice through the optic zone into a series of successive arcs extending radially outwardly from a central arc that is centred on the optical axis;

within the model, tilting each arc in the series of successive arcs about the midpoint of that arc, such that light rays from a distant point source passing through the midpoint of each arc converge towards a first point on the optical axis, and wherein for each arc, light rays from the distant point source passing through that arc converge towards a respective second point that is a respective first distance from the optical axis; and

designing a lens based on the modelled lens.